FALLING HEAD TEST PROCEDURE

April 15, 1997

A. Preparing Percolation Test Hole(s)
   1. Dig or bore a hole, four to twelve inches in diameter with vertical walls to the approximate depth of the soil absorption system (bottom of trench or bed).
   2. Scratch the side wall and bottom to remove any smeared soil and remove loose material.
   3. Place one inch of coarse sand or gravel on bottom to protect bottom from scouring action when the water is added.

B. Determine Percolation Rate
   1. If soil is mostly clay, go to step D.
   2. Place twelve inches of water in hole and determine time to seep away. Record this time on the site evaluation form.
   3. Repeat step B.2. above. Also record this time on the site evaluation form.
   4. If the time of the second test is less than ten minutes go to step C, if not skip to step D.

C. Sandy (granular) Soils
   1. Establish a fixed reference point, add water to six inches above gravel and measure water level drops every ten minutes for 1 hour.
   2. Use a shorter time interval if first six inches seeps away in ten minutes or less.
   3. After each measurement, the water level is readjusted to the six inch level. At no time during the test is the water level allowed to rise more than the six inches above the gravel.
   4. Record time intervals and water drops on site evaluation form.
   5. Use final water level drop interval to calculate percolation rate. (step F)

D. Other soils (non-granular, e.g. silt, loams and clays)
   1. Maintain at least twelve inches of water in the hole for at least four hours to presoak soil.
   2. Do not remove water remaining after four hours.
   3. Permit soil to swell at least twelve hours. (Dry clayey soils should be soaked and permitted to swell for longer periods to obtain stabilized percolation rates).
   4. After swelling, remove loose material on top of gravel.
   5. Use fixed reference point, adjust water level to six inches above gravel and measure water level drop.
   6. If the first six inches of water seeps away in less than thirty minutes, measure water level drops every ten-minutes and run for one hour.
   7. If the first six inches of water takes longer than thirty minutes to seeps away, use thirty minute time intervals for four hours or until two successive drops do not vary by more than one-sixteenth inch (stabilized rate).
   8. After each measurement, the water level is readjusted to the six inch level. At no time during the test is the water level allowed to rise more than the six inches above the gravel.
   9. Record time intervals and water drops on site evaluation form.
   10. Use final water level drop interval to calculate percolation rate. (step F)

F. Use final drop interval to calculate percolation rate and record on site evaluation form:

$$\frac{\text{Time Interval}}{\text{Water Level Drop}} = \text{Perc rate}$$